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WPI Acc No: 2001-212116/200122

Cooling and granulation system, for extruded plastic strand, brings about local partial crystallization above glass transition temperature, before granulation

Patent Assignee: RIETER AUTOMATIK GMBH (RIET)

Inventor: GLOECKNER F; STEINBACHER W

Number of Countries: 032 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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DE 19933476	A1	20010125	DE 1033476	A	19990716	200122 B
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WO 200105566	A1	20010125	WO 2000EP6691	A	20000713	200122
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EP 1113913	A1	20010711	EP 2000949332	A	20000713	200140
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WO 2000EP6691	A	20000713				
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CN 1315900	A	20011003	CN 2000801296	A	20000713	200205
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KR 2001074857	A	20010809	KR 2001702562	A	20010227	200211
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TW 487624	A	20020521	TW 2000114190	A	20000908	200320
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JP 2003504246	W	20030204	WO 2000EP6691	A	20000713	200320
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JP 2001510636	A	20000713				
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Priority Applications (No Type Date): DE 1033476 A 19990716

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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DE 19933476	A1	8	B29B-009/06		
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WO 200105566	A1	G	B29B-009/06		
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Designated States (National): CA CN IN JP KR MX

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU
MC NL PT SE

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LI LT LU LV MC MK NL PT RO SE SI
CN 1315900 A B29B-009/06
KR 2001074857 A B29B-009/06
TW 487624 A B29B-009/06
JP 2003504246 W 21 B29B-009/06 Based on patent WO 200105566

Abstract (Basic): DE 19933476 A1

NOVELTY - In cooling and granulation system, extruded plastic strand is partially-crystallized by a temperature-controlled liquid (4) in a crystallization section (5) Immediately after leaving the extrusion die (1). The liquid is held and maintained above the glass transition temperature of the strand. This treatment continues up to the granulation stage, which follows.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for the corresponding tempering and granulation equipment.

USE - To temper and granulate an extruded plastic strand.

ADVANTAGE - The strand length ahead of granulation is shortened, with a corresponding reduction in the size of plant. Partial crystallization takes place in an outer skin of the strand. This confers adequate strength for granulation to pellets, with no prior drying. The plant is much shorter than earlier systems which employed cold water for cooling, followed by a separate drying stage. Length of the new plant, expressed as seconds of residence time is 0.5-5 seconds. A surprise bonus awaits users: algae will not survive the hot water. The water stays relatively pure. Further process discussion is included in this disclosure.

DESCRIPTION OF DRAWING(S) - A schematic side view of the equipment is exhibited.

extrusion die (1)

temperature-controlled liquid (4)

crystallization section (5)

plastic melt (6)

pp: 8 DwgNo 1/4

Derwent Class: A31

International Patent Class (Main): B29B-009/06

International Patent Class (Additional): B29B-009/12; B29B-013/00;

B29B-013/04; B29C-047/88; B29K-021-00; B29K-077-00